CLAIMS

What is claimed is:

1. A helmet system for a player engaged in contact sports, comprising:
   a. a helmet shell having inner and outer surfaces reinforced with a bonded net or mesh of long length fibers;
   b. a pliable, padded inner helmet attached to said inner surface of said helmet shell, said inner helmet being composed of shock absorbing material; and
   c. an attachment means disposed within said helmet shell for positioning and holding said second pliable padded inner helmet in contact with the player's head,

   said helmet shell producing a low curvature bend under impact load, increasing contact area between said inner surface and said inner helmet to thereby increase load absorption and decrease load intensity at the player's head.
2. A helmet system as recited by claim 1, wherein said helmet shell is composed of a polymeric material.
3. A helmet system as recited by claim 1, wherein said helmet shell has a thickness ranging from about 1/16 to 1/4 inch.
4. A helmet system as recited by claim 1, wherein said net or mesh comprises Kevlar® or Spectra® fibers.
5. A helmet system as recited by claim 1, wherein said net or mesh has a length greater than 1 inch.

6. A helmet system as recited by claim 1, wherein said inner helmet is composed of energy absorbing polymeric foam.

7. A helmet system as recited by claim 1, wherein said inner helmet has a thickness ranging from about 0.5 to 1 inch.

8. A helmet system as recited by claim 1, wherein said attachment means comprises a strap.

9. In a helmet system having a helmet shell fabricated by injection molding a polymeric material into a molding cavity, the improvement wherein a mesh or net of long length fibers is disposed on both faces of the helmet molding cavity and integrally bonded with said polymeric material during molding to form a composite helmet shell.

10. In a process for producing a helmet shell, the improvement comprising the steps of:

a. laying a mesh or net of long length fibers against inner and outer surfaces of a previously molded helmet;

b. burying said mesh or net in a polymeric solution that is compatible with the helmet shell material; and

c. evaporating said solution to form a hardened polymer.